CLAIMS

1. A rotor blade of a wind power plant, comprising a rotor blade connection for connection to a hub of the rotor of a wind power plant and a blade tip disposed at the opposite end of the rotor blade, characterised in that at least one electrical conductor (20, 21, 22, 23, 24, 26, 28) is laid over the length of the rotor blade (10), wherein the electrical conductor (20, 21, 22, 23, 24, 26, 28) begins at the rotor blade connection, extends in the longitudinal direction of the rotor blade and back to the rotor blade connection, and that there is provided a detector (16) which detects the electrical resistance of the conductor (20, 21, 22, 23, 24, 26) and that the detector (16) is connected to an evaluation device which evaluates the electrical resistance.

2. A rotor blade as set forth in claim 1 characterised in that the evaluation device is connected to a control device of the wind power plant and the wind power plant can be shut down if a change in resistance exceeds a predetermined value.

3. A rotor blade as set forth in claim 1 or claim 2 characterised in that a plurality of electrical conductors (20, 21, 22, 23, 24, 26, 28) is laid from the rotor blade connection in the longitudinal direction of the rotor blade and back again and that said conductors (20, 21, 22, 23, 24, 26, 28) are connected to the detector (16).

4. A rotor blade as set forth in claim 3 characterised in that at least one of the electrical conductors (20, 21, 22, 23, 24, 26, 28) extends a predetermined distance in the longitudinal direction of the rotor blade, said distance being shorter than the length of the rotor blade.

5. A rotor blade as set forth in claim 3 characterised in that at least one of the conductors (20, 21, 22, 23, 24, 26) extends to the rotor blade tip (13).

6. A rotor blade as set forth in claim 5 characterised in that at least one conductor (28) which is shorter than the rotor blade length is galvanically connected at a predetermined location to the conductor which extends over the rotor blade length.

7. A rotor blade as set forth in one of the preceding claims characterised in that at least one electrical conductor (20, 21, 22, 23, 24, 26) is fixedly connected to the support structure (34, 36) of the rotor blade (10).

8. A rotor blade as set forth in claim 7 characterised in that the electrical conductor (20, 21, 22, 23, 24, 26) is enclosed in the support structure (34, 36) of the rotor blade (10).

9. A rotor blade as set forth in one of claims 7 and 8 characterised in that the electrical conductor (20, 21, 22, 23, 24, 26) is enclosed in a carrier (38) which is connected to but releasable from the support structure (34, 36).

10. A rotor blade as set forth in one of claims 7 to 9 characterised in that at least one electrical conductor (20, 21, 22, 23, 24, 26, 28) is provided on/in each support structure (34, 36) in the longitudinal direction of the rotor blade.

11. A rotor blade as set forth in one of the preceding claims characterised in that the electrical conductors (20, 21, 22, 23, 24, 26, 28) contain at least a predetermined aluminium component.

12. A rotor blade as set forth in one of the preceding claims characterised in that the conductors (20, 21, 22, 23, 24, 26, 28) have a predetermined surface roughness.

13. A rotor blade as set forth in one of the preceding claims characterised in that the conductors (20, 21, 22, 23, 24, 26, 28) are connected to a plug connector in the region of the rotor blade root (11).

14. A process and apparatus for measuring the flexing or change in length of a product, for example a rotor blade or a pylon of a wind power plant, wherein laid in the product is a conductor which upon flexing and/or a change in length of the product experiences a change in length, wherein a signal, preferably a pulse signal, is generated by means of a signal generator and fed into the line at the first input thereof, wherein arranged at the second end of the line is a signal receiver which upon reception of the signal from the signal generator causes same to emit a further signal, and that there is provided a device by means of which the number of emitted signals within a predetermined unit of time is measured and the flexing and/or increase in length of the product can be ascertained from the comparison of the measured number of emitted signals per predetermined unit of time with a stored table.

15. A process and apparatus for measuring the flexing or change in length of a product, for example a rotor blade or a pylon of a wind power plant, wherein laid in the product is a conductor which upon flexing and/or a change in length of the product experiences a change in length, wherein a signal, preferably a pulse signal, is generated by means of a signal generator and fed into the line at the first input thereof, wherein however arranged at the second end of the line is a reflector which reflects the signal from the signal generator to the first end of the line where it is received at the input by a signal receiver and which then triggers the above-described triggering of a further signal by the signal generator, wherein the signal generator and the signal receiver are connected together and the time between signal reception and triggering of a consequential signal by the signal generator is always substantially constant.

16. A process and apparatus as set forth in claim 14 or claim 15 wherein the line is an electrical line or an optical fibre cable.

17. A process and apparatus as set forth in one of the preceding claims wherein the conductor is connected in positively locking relationship to the product at least at its ends.

18. A process and apparatus as set forth in one of the preceding claims wherein the conductor is connected to the product in positively locking relationship at least in a given region and upon flexing or elongation of the product the conductor is stretched only in said predetermined region.

19. A wind power plant comprising at least one rotor blade (10) as set forth in one of the preceding claims.